DEPARTMENT OF ENERGY
FY 2002 CONGRESSIONAL BUDGET REQUEST
ENERGY EFFICIENCY AND RENEWABLE ENERGY
ENERGY CONSERVATION
(Tabular Dollars in Thousands, Narrative in Whole Dollars)

INDUSTRY SECTOR

PROGRAM MISSION

Mission

The Office of Industrial Technologies (OIT) partners with key, energy-intensive industries to develop and apply advanced technologies and practices that reduce energy consumption, maintain and create jobs, boost productivity, and significantly improve the competitiveness of the United States.

Strategic Context

Industry is our Nation=s largest energy consuming sector, accounting for 38 percent of all U.S. energy use. Moreover, just nine industries **B** agriculture, aluminum, chemicals, forest products, glass, metal casting, mining, petroleum, and steel **B** account for 27 percent of all U.S. energy use. Collectively, these nine industries represent the backbone of the U.S. economy, supplying over 90 percent of the materials needed for our buildings, transportation, communications, and manufacturing sectors. They ship $1 trillion in products annually, employ over 3 million people, and generate four additional jobs in the economy for each manufacturing job.

These nine industries contain tremendous opportunities to reduce energy use while increasing productivity and cutting waste. However, they are limited in their ability to invest in the necessary R&D by several factors:

- Narrow profit margins and dependence on capital-intensive equipment
- Increasing competition from foreign firms that receive significant support and market advantages from their governments
- Volatile energy prices (industrial energy prices rose 21 percent or more in 1999-2000) and sporadic energy supply interruptions
- Growing pressure to restrict emissions and effluents

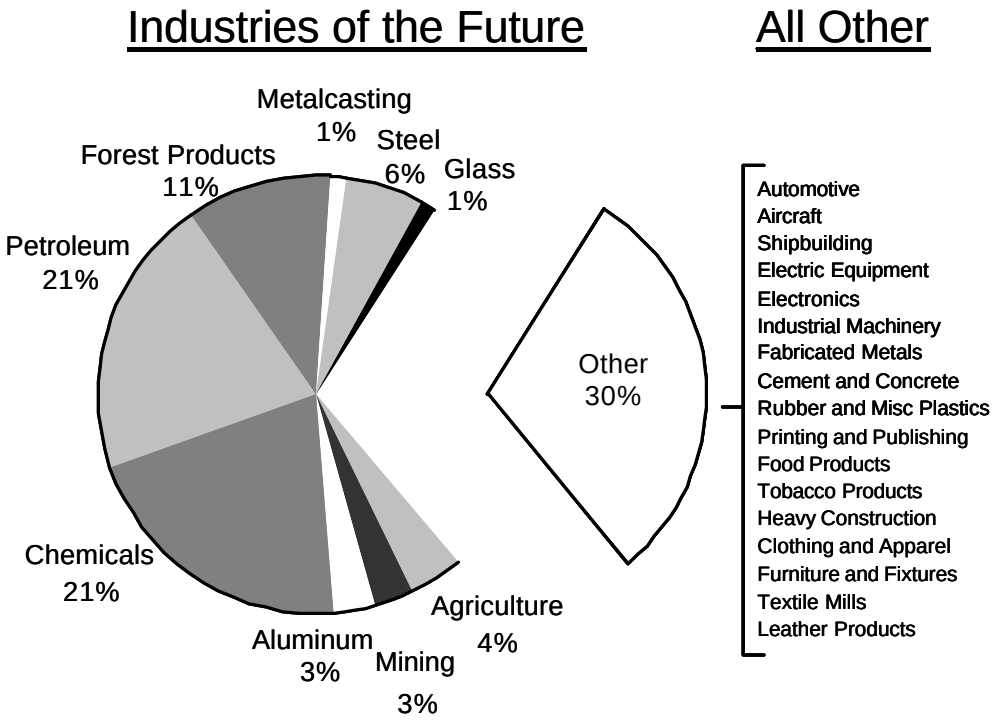
As a result, energy-intensive industries typically invest in R&D at one-third the rate of the manufacturing sector as a whole.

Strategic Approach

By developing and adopting more energy-efficient technologies, industry can boost productivity and competitiveness, strengthen national energy security, and improve the environment. A collaborative partnership between industry and government provides the best strategy to align national energy objectives with the commercial interests of industry for mutual benefit. Through an innovative strategy known as "Industries of the Future", OIT helps industry develop and apply advanced, energy-efficient technologies and processes. OIT invests in pre-competitive and high-risk R&D that individual companies are unable to undertake without government support. By working with entire industries rather than individual companies, OIT maximizes the energy benefits of technology investments and fosters the formation of public-private partnerships. Although the Industries of the Future strategy focuses on nine key energy-intensive industries, it engages the participation and expertise of many related industries.

Energy Use by Industry

Total 1999 End Use: 36.7 Quads[1]



[1]Includes 2.8 quads of renewable energy used principally in the forest products industry.

The Industries of the Future strategy is founded on the conviction that industry is best qualified to identify its technology priorities. The strategy features three core components:

1) Industry leaders collaboratively define a vision, develop industry-wide long-term goals, and create technology roadmaps that articulate specific technology and research strategies to achieve the vision.
2) OIT issues competitive R&D solicitations in support of the roadmaps, requiring a 50 percent cost share from industry over the life of each project. OIT selects projects that address top industry needs, require government support, and help meet national energy goals.
3) OIT supports related programs that focus on crosscutting technologies, financial assistance, and technical system assessments that serve multiple energy-intensive industries.

OIT is continuing its national efforts through its State Industries of the Future initiative. Since each State has a distinctive industrial base, environmental profile, and natural resource mix, the initiative encourages States to tailor its partnership to meet regional industrial energy priorities. The importance of energy-intensive industries to State economies is widely recognized and has given rise to a network of partnerships among State agencies, industry associations, and regional organizations. The Industries of the Future strategy capitalizes on these natural partnerships at the State and regional level to leverage national technology investments; increase energy, economic, and environmental benefits; coordinate State and national activities; and reach smaller companies.

The Industries of the Future strategy facilitates industry access to the wealth of technologies and specialized expertise available through the DOE laboratories and universities. The visions and roadmaps help DOE labs better understand, communicate, and provide efficient access to the special capabilities they possess.

Goals and Benefits

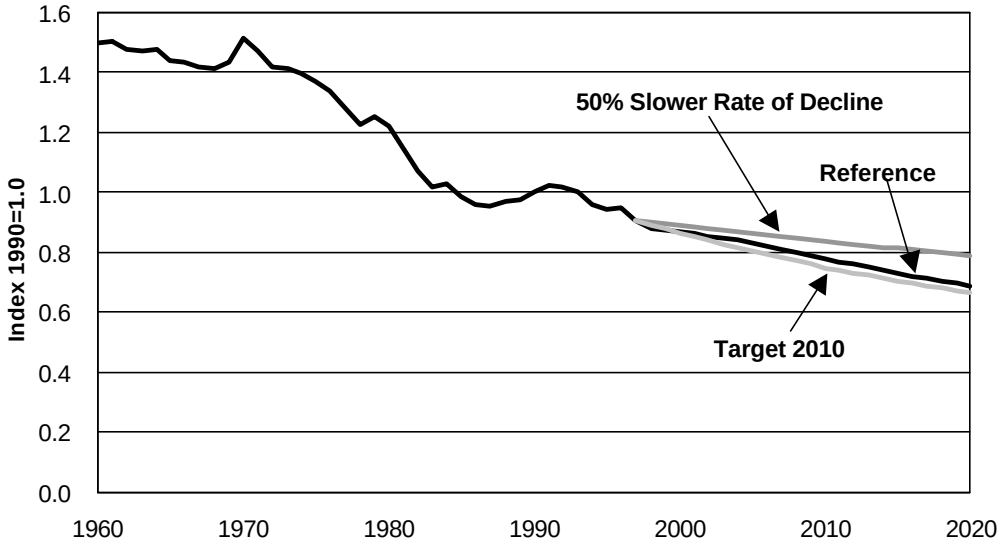
Goals and Performance Measures:

- **$** By 2010, contribute to a 25 percent improvement in energy efficiency and 30 percent reduction in emissions for the nine partner industries (from 1990 levels), and a 35 percent improvement in efficiency and 50 percent reduction in emissions by 2020. See figure1.
- **$** By 2010, commercialize over 180 technologies through R&D partnerships.

Benefits:

By 1999, OIT programs were instrumental in achieving energy cost savings to industry of 189.4 trillion Btus and $820 million. By 2000, OIT had helped develop more than 140 commercialized industrial technologies. This success rate is on the industry pull designed into the Industries of the Future strategy. OIT currently supports roughly 500 R&D projects involving over 2,000 partners. Partners include small, medium, and large companies; national laboratories; universities; States; and non-governmental organizations. R&D projects will be continued. The completion of these projects and their commercialization will provide significant contributions to energy efficiency improvements and reductions in emissions for energy intensive industries.

Figure 1: Industrial Energy Intensity in Alternative Scenarios, 1960-2020



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PROGRAM FUNDING PROFILE

Program Activity	FY 2000 Comparable	FY 2001 Comparable	FY 2002 Request	Program Change Request vs. FY 2001 Dollar	Program Change Request vs. FY 2001 Percent
Industries of the Future (Specific) Operating Expenses	$ 65,644	$ 72,390	$ 46,424	$ -25,966	-35.9%
Industries of the Future (Crosscutting) Operating Expenses	$ 57,609	$ 61,719	$ 31,900	$ -29,819	-48.3%
Cooperative Programs with States Operating Expenses	$ 1,964	$ 1,996	$ 0	$ -1,996	-100.0%
Energy Efficiency Science Initiative Operating Expenses	$ 3,830	$ 3,891	$ 0	$ -3,891	-100.0%
Management and Planning Operating Expenses	$ 8,369	$ 8,626	$ 9,400	$ 774	9.0%
TOTAL	$ 137,416	$ 148,622	$ 87,724	$ -60,898	-41.0%
Summary					
Operating Expenses	$ 137,416	$ 148,622	$ 87,724	$ -60,898	-41.0%
Total Program	$137,416[a]	$148,622[b]	$ 87,724	$ -60,898	-41.0%

Staffing (FTE's)			
HQ FTEs	52	59	54
Field FTEs	8	7	6
Total FTEs	60	66	60

Authorizations:
P.L. 102-486, "Energy Policy Act of 1992"
P.L. 94-163, "Energy Policy and Conservation Act" (EPCA) (1975)
P.L. 94-385, "Energy Conservation and Production Act" (ECPA) (1976)
P.L. 95-91, "Department of Energy Organization Act" (1977)
P.L. 95-618, "Energy Tax Act of 1978"
P.L. 95-619, "National Energy Conservation Policy Act" (NECPA) (1978)
P.L. 95-620, "Powerplants and Industrial Fuel Use Act of 1978"
P.L. 96-294, "Energy Security Act" (1980)
P.L. 100-12, "National Appliance Energy Conservation Act of 1987"
P.L. 100-615, "Federal Energy Management Improvement Act of 1988"
P.L. 101-218, "Renewable Energy and Energy Efficiency Technology Competitiveness Act of 1989"
P.L. 101-549, "Clean Air Act Amendments of 1990"
P.L. 101-575, "Solar, Wind, Waste, and Geothermal Power Production Incentives Act of 1990"
P.L. 93-577, "Federal Non-nuclear Energy Research and Development Act of 1974"
P.L. 106-224, "Biomass Research and Development Act of 2000"

[a/] Reflects adjustment for approved reprogramming 00-R-3 of $-2,575,000 for the Small Business Innovative Research (SBIR) program and $-155,000 for the Small Business Technology Transfer Pilot Program (STTR). Reflects comparability adjustment of $-34,700,000 for the new Power Technologies Program

[b/] Reflects adjustment of $-328,000 for Omnibus Rescission, P.L. 106-554. Reflects comparability adjustment of $-25,700,000 for the new Power Technologies Program.

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SUMMARY OF CHANGES

	FY 2002 Request
FY 2001 Comparable	$ 148,622
Non-Discretionary	
– Increase for Federal Pay Raise and Locality Pay.	388
– Increase for Federal Personnel Transit Subsidy.	16
FY 2002 Base	$ 149,026
Industries of the Future (Specific):	
– Steel Vision - FY 2002 funding will focus on improving production efficiency.	-4,049
– Petroleum Vision - No funding requested.	-2,768
– Aluminum Vision - FY 2002 funding will focus on develpment of improved potliners and a control strategy for an advanced cell technology..	-6,325
– Mining Vision - FY 2002 funding will focus on advanced mining and processing technologies..	-1,398
– Metalcasting Vision - New Casting Applications will be shifted to industry, Government support will focus on new material and manufacturing technologies.	-2,202
– Glass Vision - FY 2002 funding will focus on improving energy efficiency in glass furnace combustion.	-1,822
– Chemicals Vision - FY 2002 funding will focus on new chemical science and engineering.	-4,781
– Supporting Industries -No funding requested.	-1,571

– Technical/Program Management Support - The reduction reflects required support for associated reduced program funding levels.	-1,050
Industries of the Future (Crosscutting):	
– Enabling Technologies - Materials - Delay implementation of Industrial Materials of the Future Program. Combustion - Continue support of only 1 of 3 gasification technology demonstrations for forest products industry. Sensors and Controls - No funding requested for two new control system projects. Delay five sensor projects with broad industry applicability	-15,666
– Financial Assistance - No funding requested for initiation of new projects to reflect priority shift from commercialization to research and development.	-5,132
– Technical Assistance - Conduct 320 industrial assessments. Best Practices program will focus on development of allied partnerships, cost-shared plant assessements, and recognition programs.	-7,019
– Technical/Program Management Support - The reduction reflects required support for associated reduced program funding levels.	-2,002
Cooperative Programs With States:	
– No funding requested.	-1,996
Energy Efficiency Science Initiative:	
– No funding requested.	-3,891
Management and Planning:	
– An increase for evaluation and planning offset from a reduction of 6 FTEs as adjusted for discretionary payroll increases.	370
FY 2002 Congressional Budget Request	$ 87,724